IN THE CLAIMS:

This listing replaces all prior listings, and versions, of the claims.

1. (Currently amended) A barrier structure for copper metallization ~~structure~~, comprising:

a dielectric pattern formed on a surface of a substrate;

a first Ru layer formed on the dielectric pattern;

an oxide film formed ~~in a surface region~~ by oxidizing an upper part of the first Ru layer;

a second Ru layer formed on the oxide film; and

a Cu layer formed on the second Ru layer.

2. (Currently amended) The ~~copper metallization~~ barrier structure of claim 1, wherein the substrate is a silicon substrate.

3. (Currently amended) The ~~copper metallization~~ barrier structure of claim 1, wherein the first Ru layer and the second Ru layer are formed by using a sputtering or CVD(chemical vapor deposition) and the first Ru layer has a thickness in a range from about 80 angstroms to about 120 angstroms.

4. (Currently amended) The ~~copper metallization~~ barrier structure of claim 1, wherein the oxide film is made of RuxOy formed by a plasma treatment using N2O or O2.

5. (Currently amended) The ~~copper metallization~~ barrier structure of claim 4, wherein the thickness of the oxide film is about 250 angstroms, which is obtained by oxidizing an upper part of the first Ru layer.

6. (Currently amended) The ~~copper metallization~~ barrier structure of claim 4, wherein the ratio of x:y = 1:2.

7. (Currently amended) A method for fabricating a barrier structure for copper metallization, comprising the steps of:

forming a dielectric pattern on a surface of a substrate;

forming a first Ru layer on the dielectric pattern;

forming an oxide film in a surface region of the first Ru layer;

forming a second Ru layer on the oxide film; and

forming a Cu layer on the second Ru layer.

8. (Withdrawn) The method of claim 7, wherein the substrate is a silicon substrate.

9. (Withdrawn) The method of claim 7, wherein the first Ru layer and the second Ru layer are formed by using a sputtering or CVD(chemical vapor deposition) and has a thickness in a range from about 80 angstroms to about 120 angstroms.

10. (Withdrawn) The method of claim 7, wherein the oxide film is made of RuxOy formed by a plasma treatment using N2O or O2.

11. (Withdrawn) The method of claim 10, wherein the thickness of the oxide film is about 250 angstroms, which is obtained by oxidizing an upper part of the first Ru layer.

12. (Withdrawn) The method of claim 10, wherein the ratio of x:y = 1:2.